√ Ω TURBO R HARDWARE:

mapperfunctions for slot 3-2 & 3-3

THE MSX TURBO R HAS 2 SPECIAL MAPPER FUNCTIONS IN SLOT 3-2 (DISKROM & DOS 2.30) AND SLOT 3-3 (WORDPROCESSOR ETC.)

SLOT 3-3

THIS SLOT IS DEVIDED INTO 8 PAGES OF 8K EACH (LIKE A MEGA-ROM CARTRIDGE). EACH 8K PAGE CAN BE PROGRAMMED TO SHOW RAM FROM THE BUILD IN 256K MAPPER OR ROM FROM THE 1.5 MEGAROM (+ 0.5 MEGA OPTION).
10 MEMORYLOCATIONS IN THE SLOT ARE USED TO CONTROL THIS.

7FF8 HEX SELECTS BETWEEN ROM AND RAM FOR EACH 8K BLOCK.

BIT 7	6	5	4	3
E000	C000	A000	8000	6000
-FFFF	-DFFF	-BFFF	-9FFF	-7FFF

BIT 2	1	0	
4000	2000	0000	0 = ROM
-5FFF	-3FFF	-1FFF	1 = RAM

(THE REG. HAVE TO BE ENABLED BY BIT4 IN REG. 7FF9h BEFORE VALUES ARE WRITTEN TO THIS LOCATION.)

7FF9 HEX SELECTS BETWEEN MEMORY OR REGISTER VALUES THIS WAY IT SI POSSIBLE TO CHOOSE BETWEEN READING THE REGISTERS OR READING THE REAL MEMORY-CONTENTS.

READ ACCESS CONTROL REGISTER.

BIT 4	BIT 3	BIT 2
7FF8	7FF9	7FF0-7FF7h
RAM/ROM	MEM/REG	RD.MAPPERregs

0 = MEM 1 = REG

THIS IS NESSESARY IF THE 10 LOCATIONS ARE TO BE USED BOTH AS MEMORY AND AS REGISTERS. WRITING TO 7FF8 IN THE MEM MODE WILL GO TO THE REGISTER WRITING TO 6000h-7FFFh WILL CHANGE THE 8 MAPPERREGISTERS IN BOTH MEM & REG MODES! (IN MEM MODE THE VALUES WILL ALSO

GO TO THE RAM AS WELL).

TO CHOOSE A 8K PAGE FROM RAM/ ROM IS SIMPLE, WRITE THE NR. OF WANTED 8K BLOCK TO ANY ADRS IN THE FOLLOWING INTERVALS.

REG. WRITE
6000h-63FFh
6400h-67FFh   memory interval
6800h-6bFFh   and reg. rd
6c00h-6FFFh   below.
7000h-73FFh
7800h-7bFFh
7400h-77FFh
7c00h-7FFFh

Memory interval	Reg.Rd
8k page# for 0000-1FFFh	7FF0h
2000-3FFFh	7FF1h
4000-5FFFh	7FF2h
6000-7FFFh	7FF3h
8000-9FFFh	7FF4h
A000-BFFFh	7FF5h
C000-DFFFh	7FF6h
E000-FFFFh	7FF7h

NOTICE THAT 7800-7BFF AND 7400 - 77FF ARE SWAPPED. (THE REGISTER Rd REGISTERS CAN NOT BE READ BEFORE BIT 2 IN REG. 7FF9h are set = 1)

IN THE TURBO R THERE ARE 1 OPTIONAL EPROM/PROM LOCATION FOR 27512 OR 271000, 64KB AND 128KB. WHICH NOW CAN BE USED FOR OUR OWN PROGRAMS.
INITIALY THE BUILDIN WORDPROSSOR PROGRAM ARE PLACED IN SLOT 3-3. IT CAN BE CALLED BY _HIRO BUT HAVE NO FURTHER INFLUENCE (AS FAR AS I CAN SEE). THE OPTIONAL EPROM ARE ADRESSED FROM 8K BLOCK# C0 HEX. THE FOLLOWING PROGRAM WILL ENABLE THE FIRST TWO 8K BLOCKS IN THE EPROM FOR ADRESSES 4000-BFFFh.

```
; PROGRAM BY H.G. 1991
; TURBO R
LD A,%10001111 SLOT-ID SLOT3-3
LD HL,#7FF9
LD E,%00010000 ENABLE 7FF8 REG
               FOR WRITE INPUT
CALL #0014
LD A,%10001111
DEC HL
LD E,0      CHOOSE RAM ALLOVER
CALL #0014
LD A,%10001111
LD HL,#6BFF CHOOSE PAGE C0HEX
   =1. 8K BLOCK FOR 4000-5FFFh
```

```
LD E,#C0
CALL #0014
LD A,%10001111
INC HL      CHOOSE PAGE C1h=2
    8K BLOCK FOR 6000-7FFFh
INC E
CALL #0014
LD A,%10001111 CLOSE RAM/ROM
               REGISTER
LD HL,#7FF9
LD E,%00
CALL #0014
RET
```

ANY ROM THAT DOWS NOT NEED TO BE INITIATED CAN BE USED WITHOUT ANY FURTHER PROGRAMMING. CALL STATEMENTS CAN BE USED BECAUSE #FD06 HEX CONTAINS 20h => CALLS ARE DERECTED TO THE SLOT.

SCSI HARDDISK INTERFACES THAT NEEDS A DOS 2.2 IN A SLOT PRIOR TO ITSELF CAN PERHAPS WORK WITH THE FOLLOWING PROCEDURE IN SLOT 3-3.

```
(#7FF9),#18
(#7FF8),%00000100 ENABLE RAM
        FOR 4000h-5FFFh
(#6800),#88 FIRST 8K PART FROM
        MEM MAPPER PAGE 4

4000: 41 42 10 40 00 00 00 00
      00 00 00 00 00 00 00 00
4010: F7 SLOTID ADR C9
```

THEN RESET (BY SOFTWARE) NOW WE HAVE DEFINED A MINI-CARTRIDGE PROGRAM IN SLOT 3-3 THAT WILL CALL THE HARDDISK-INTERFACE IN SLOT 1 OR 2.

WRITTEN BY H.G. (C) 1991
           SCANDINAVIA

THANK YOU A LOT FOR THIS VERY INTERSTING PIECE ABOUT THE NEW TURBO R. WE HOPE TO RECEIVE MORE FROM YOU.

BEST REGARDS,

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